Amendments to the Claims:

1. (Original) An apparatus for analysing water chemistry, the apparatus being adapted to operate downhole and comprising:

a colouring agent supply device for supplying a colouring agent to a water sample, the colour of the water sample thus supplied being indicative of the water sample chemistry, and

a colorimetric analyser arranged to determine the colour of the water sample.

2. (Original) An apparatus according to claim 1 which is installed downhole.

3. (Currently Amended) An apparatus according to claim 1 ~~or 2~~ wherein the colorimetric analyser is operably connected to a processor which determines the water sample chemistry from the colour of the water sample.

4. (Currently Amended) An apparatus according to ~~any one of the previous claims~~ Claim 1, wherein the colorimetric analyser comprises a spectrometer.

5. (Currently Amended) ~~Use of the~~ An apparatus of ~~any one of the previous claims~~ claim 1 , wherein said apparatus is used for *in situ* analysis of downhole water chemistry.

6. (Original) A method for analysing downhole water chemistry, the method comprising the steps of:

(a) supplying a colouring agent to a downhole water sample, the colour of the water sample thus supplied being indicative of the water sample chemistry, and

(b) determining the colour of the water sample, wherein steps (a) and (b) are performed *in situ*.

7. (Original) A method for monitoring contamination of downhole water, the method comprising the steps of:

(a) adding a tracer agent to a fluid which is a potential contaminant of the downhole water,

(b) supplying a colouring agent to a sample of the downhole water, the colour of the water sample thus supplied being indicative of the presence of the tracer agent, and

(c) determining the colour of the water sample, wherein steps (b) and (c) are performed *in situ*.

8. (Cancelled) ~~An apparatus for analysing water chemistry as herein described with reference to and as shown in the accompanying drawings.~~